OPTIONAL FORM NO. 10
5010-104

UNITED STATES GOVERNMENT

Memorandum

TO : Director of Communications

DATE: 15 December 1964

FROM : Chief, Engineering Staff, OC

SUBJECT: Monthly Report - November 1964

This is the Engineering Staff monthly report for November 1964.

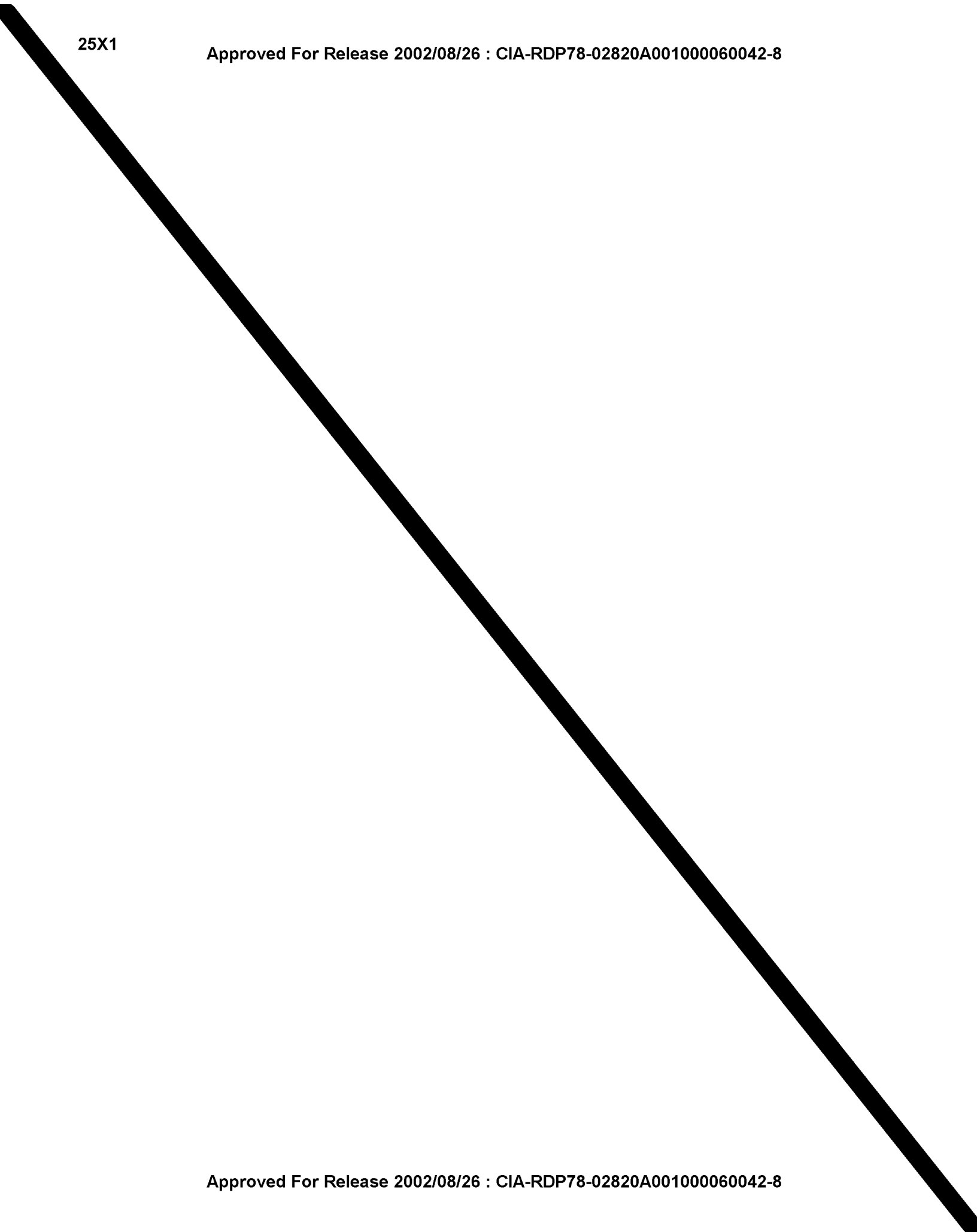
There were no "crises" items but we did have one unpredicted flap concerning the MAX-1 environment [redacted] The disc file water chillers failed and are being replaced with units of higher capacity. The air conditioning distribution in the MAX shield room required re-work. The UPS became cantankerous and for a while "Murphy's Law" was in full sway. At the end of the month corrective action was taken/being taken on all. The result - defer acceptance testing of MAX-1 until January. 25X1A6B

A considerable effort was directed to prewiring and complete testing of the crypto/radio equipments for the [redacted] "curtain" posts. Shielded enclosures and diesel generators are in the procurement channels and all Headquarters staff work is proceeding on schedule. Selection of TDY installation people is in process. 25X1

[redacted] 25X1A2G

[redacted] 25X1A9A

25X1 [redacted]



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2. Transportable Radio Station, Systems I and II - The long awaited Transit - Operating Cases were finally received at the warehouse. The mock-up of these stations should be completed early in December.

3. Multicoupler w/Notch Filter, Delta 2X4 - Two electrical deficiencies were indicated during the first field tests of the [redacted] 2X4. Following up reports of channel interaction and resistor burn-out in the multicoupler, five stations were questioned by cable and verified the existence of up to 100 volts of induced RF on some receiving antenna transmission lines. Since the interaction was a case of the unit not meeting specifications, [redacted] will take care of it at no cost. However, preventing resistor burn-out involves increasing the wattage of the resistors, and since the cause is an operating environmental problem, correction will amount to approximately $11.00 per multicoupler.

25X1A5A1

25X1A5A1

4. HFL-1000 Linear Amplifier

a. A trouble report from [redacted] on a design deficiency in T-203 (110 to 220 V. transformer) started a flurry of tests by the manufacturer, the transformer manufacturer and us. At this time, everyone agrees that the T-203 gets hot when operated on 50 cycle power but a corrective measure has not yet been decided on for amplifiers already in the system. We will have a firm answer by the next reporting period.

25X1A6A

25X1A5A1 b. The [redacted] test of the HFL-1000 is nearing completion. We are requesting a second check on the reported presence of RF in the power supply.

25X1A5A1 c. A meeting was called by OL/PD to initiate negotiations with [redacted] representatives for the purchase of 100 improved HFL-1000's; a representative from OC-E attended. No contract was signed at this meeting, but all technical changes and modifications were agreed on, with a delivery schedule to begin 150 days after receipt of order.

25X1C13B

[redacted]

25X1C13B

6. PAL-350 Linear Amplifier - The PAL-350 component failures as reported from various field stations have been compiled into a master listing. Preliminary analysis indicates that five components in the power supply and three in the amplifier will require corrective action. A complete report will be published in a few days; the manufacturer will be on the routing list, and we are exploring the possibility of his correcting defects at no cost to us.

25X1A5A1 7. LSSB-63-1A, [ ] 10-channel SSB Exciter - The manufacturer reports that it will be approximately two more weeks (or 15 Dec.) before delivering the first two (of a total of thirty-five) remote-control exciters. One will be sent to the R&D Lab for an A&A, the other delivered to [ ] for operational testing and use.

25X1

8. Auto-Select - Work is continuing on the Auto-Select Frequency Shift Converter unit being developed by [ ] Tests will be started in the next several weeks between Alcott Hall and [ ] in order to compare the narrow shift [ ] unit with a Northern 174 which has been provided to [ ] as G.F.E. We have obtained approval to use a number of frequencies for transmission from our shop in Alcott Hall for this and similar test purposes.

25X1A5A1 25X1A 25X1A5A1 25X1A5A1

25X1A8A

9. [ ] Fly-Away Air Ground Communication System - The R&D Lab at [ ] will design and build a unit to insert an audio tone in the [ ] Beacon Transmitter which is part of the Ground to Air fly-away package being completed by [ ] A search has been made for a suitable keyer to be used with this beacon and a model manufactured by [ ] seems to be the only one that will fill the requirement.

25X1A6A 25X1A5A1 25X1A5A1 25X1

B. WIRE ENGINEERING

1. Selector Magnet Shield - The [ ] has been approached to arrange for the production of the shield as well as the modified parts as standard Teletype items. To date, the [ ] ration has elected to sub-contract to the [ ] for the shield production. The status of this sub-contract is not yet known, but word is expected during the next reporting period. The estimated delivery time of production items is nine months. Therefore, we have requested that a quantity of fifty (50) Selector Magnet Shield Kits be "hand made" by the [ ] for delivery in four or five months. Cost estimates expected during the next reporting period.

25X1A5A1 25X1A5A1 25X1A5A1 25X1A5A1

25X1A5A1 2. TOTEM - [redacted] has been shipped 12 ASR's and associated items for TOTEM production. Delivery is estimated for mid-February 1965. These units will be almost identical to the four previous units built. Instruction manuals were sent to all interested parties.

3. Model R-80 Optical Repeater - All requested units have been received and are under test in Alcott Hall.

4. R-85 - Two R-85 units have been received for evaluation. These are similar to the R-80 except that the output signal is inverted; and thus, the R-85 can be used in the KW-26 to replace the present sigma 72 contact relay. Operation has been reliable up to 160° F., obtainable in the KW-26 due to poor air circulation.

5. R-100 - Tests are continuing. Two units with a three section filter on the Input side were supplied to OC-SP/CEN for further RFI evaluation.

25X1A5A1 6. [redacted] Relays 601-26 - [redacted] is back in the picture again and may yet provide modification kits to update the 312 units procured a few years ago. It is expected that they may desire us to pay part of the cost for the modification. If the cost is too high, the modification will be dropped as the units can be used as they are for limited purposes. 25X1A5A1

7. Morse-To-Baudot Convertor - Model 670 - The prototype unit has been received. A slight problem developed during T&I and is now being 25X1A5A1 corrected. Mr. [redacted] has requested use of this unit and the CV-19 (Baudot-to-Morse converter) with associated TTY tape reader for operational evaluation. This test should be completed by mid-December.

8. KW-7/TWX - In a meeting with C&P it was determined that the KW-7/TWX "marriage" will be tested in Alcott Hall. The purpose of this test will be to establish installation and operating procedures, and gather reliability data on the system. It is expected that the test will start late this month. 25X1A

25X1A5A1 [redacted] 25X1A5A1
25X1A5A1

25X1A6B 10. KW-7/Fixed Plant Installation - The live circuit test between Langley and [redacted] has been delayed until mid-December or January due to installation difficulties and lack of parts.

18 Dec. Results very good.

KW-7 in a Master safe

11. Curtain Post Packages - A Teletype rack for use with the "Curtain" Post Installation packages was assembled and shipped to T&I. This unit is being used as a prototype for fabricating four additional units.

25X1A5A1 12. [redacted] Test Message Generator - Ten of these units were ordered for base station use. These "foxers" utilize solid state design, are rack mountable, and generate an 80-character programmable test message.

13. KAB-150 - NSA Filter Installation (KW-26) - A modification work order concerning the additions and deletions for KAB-150 has been written and is now being printed. All necessary parts for the technical bulletin are in Alcott Hall.

14. KAB-149 - NSA Filter Installation (KW-26) - We are still awaiting receipt of KAB-149 from OC-S.

15. HW-28 Program

a. Units are presently under test both at [redacted] and the SP Lab. 25X1A5A1

b. An MWO has been prepared and is being printed explaining the modification to provide single step operation for the HW-28 TD units.

c. A contract has been let for 400 8" reel holders to [redacted] 25X1A5A1

25X1A5A1 [redacted]

16. M-28 Stunt Box Design/NPIC - An M-28 Stunt Box modification is being designed for NPIC to provide a more reliable means for vertical tabulation of page copy. All required parts are on order.

17. M-28 Stunt Box Modification Langley Signal Center - All installation instructions and modification kits have been turned over to TSB for the modification of ten M-28 printer units. These modified printer units will provide proper "matting" of incoming messages for direct use by the cable secretariat.

C. AREA ENGINEERING SUPPORT

25X1A6B 1. [redacted] SSB Installation - Mr. [redacted] was TDY to [redacted] 25X1A9A 25X1A6B
25X1 and [redacted] during the period 18 October to 9 November. At [redacted] he 25X1A6B
supervised the installation of the SSB MUX equipment, made a technical survey/inspection of both the "R" and "T" site antenna fields in preparation
25X1A for future changes and discussed with the [redacted] Staff technical and other 25X1A5A1
aspects of the proposed Headquarters plan to install the [redacted] Tropo-
scatter system between [redacted] 25X1A6A

25X1A

2. [redacted]

25X1A6A

a. During his European TDY, Mr. [redacted] was briefed by Chief, 25X1A9A
25X1A6A [redacted] and staff on the new [redacted] Receiver site, inspected the site and held several meetings to discuss and review space, equipment, antennas and other requirements pertaining to the new installation.

b. Final revision of space and building requirements was completed by representatives of OC-E and OC-ED at a meeting on 23 November. (The original total square footage estimates exceeded the $400,000 limit established for this project.) The revisions were presented to OL/RE&CD on 24 November for incorporation in the final scope of work, drawings and request for A&E.

c. OL/RE&CD hopes to have the entire package completed, signed
25X1A off on and introduced to the [redacted] for action early 25X1
in December.

[redacted]

25X1A6A

4. [redacted]

25X1A6B a. [redacted]/MAX-1 - A generous quantity of traffic was exchanged
25X1A6B with [redacted] relating to problems encountered with MAX-1 plant 25X1A6A
facilities; namely, air conditioning, water chillers and uninterrupted power.

(1) The two disc file water chillers are being replaced with units of higher capacity.

(2) The OICC air conditioning consultant has, in conjunction with Washington, made recommendations to provide backup air conditioning for the project.

25X1A5A1 (3) The [redacted] representative departed [redacted] 25X1A6B
after several days on site UPS repairs, adjustments, and training.

25X1A6B b. [redacted]/Power - A request was forwarded to OL/RE&CD to review the power distribution system at the receiver site and forward recommendations for improvement. The present power system has become cumbersome and any further expansion would be most difficult.

25X1A6A
25X1A6A

c. [redacted] - The [redacted] architectural department returned from [redacted] after discussions relative to siting the proposed communications building. The A&E drawings for the basement located comcenter are complete, less air conditioning (which requires the most attention); we have requested copies from the post.

25X1C4A

25X1A6A
25X1C4A

[redacted]

25X1

D. ADMINISTRATIVE

25X1A9A

1. Mr. [redacted] is attending KG-13 training.

25X1A9A

2. Mr. [redacted] attended three weeks of "Red-Black" concept training at NSA.

3. Technical Bulletins No. 83 and 84 (Test Procedures for KA/A-5 and KA-2 Keying Adapters) were published.

E. INACTIVE PROJECTS

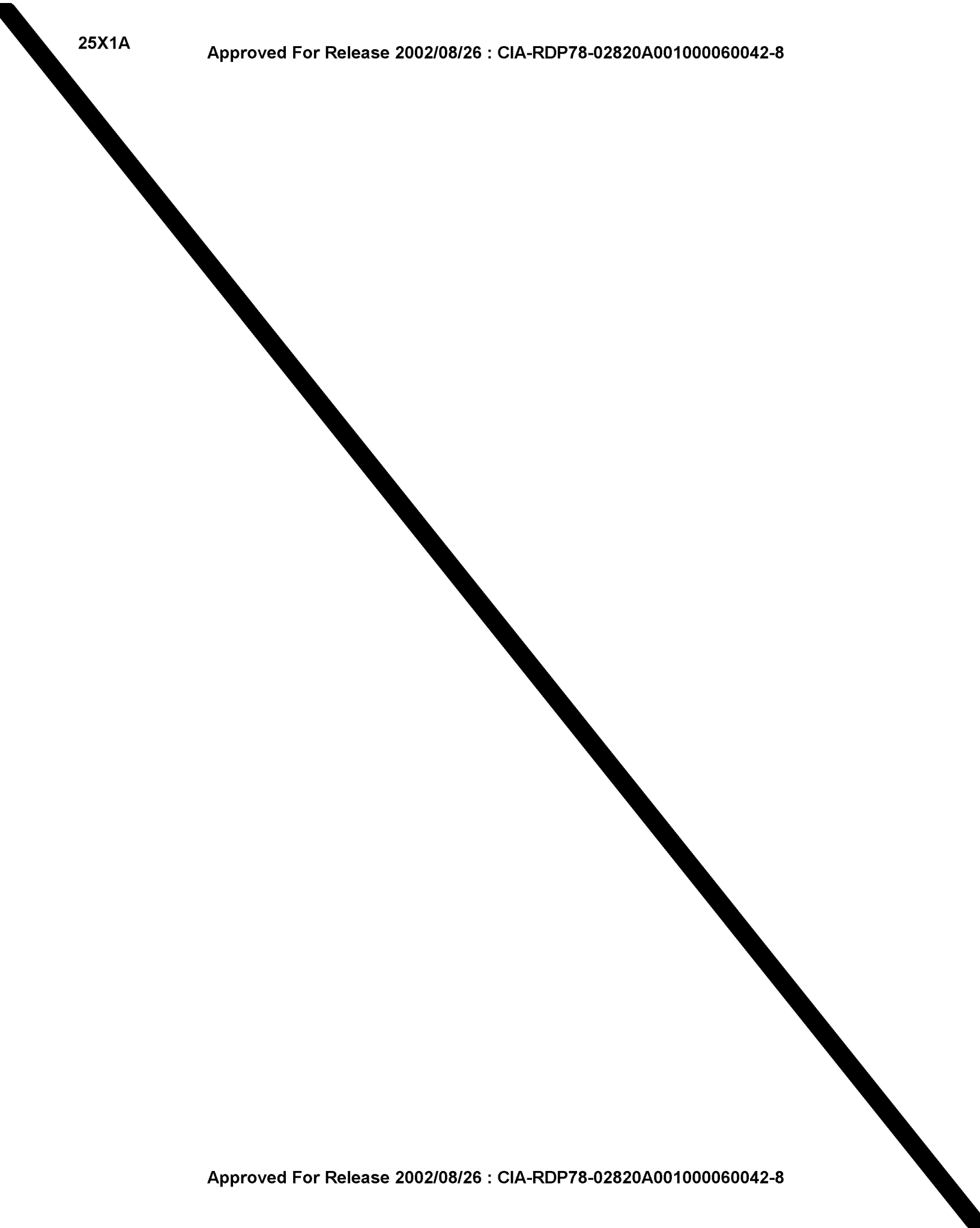
E-5085 Communication System Planning New Building
E-5159 Line Battery Supply Replacement
E-5213 Transistorized Multicoupler

25X1A2G

E-5217 [redacted]

[redacted]

25X1A9A



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